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TEACHER PERSONALITY AND SOMATIC HEALTH

BY

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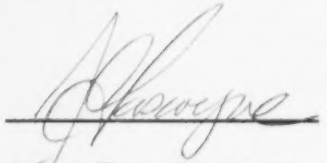

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The undersigned certify that they have read, and recommended to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled TEACHER PERSONALITY AND SOMATIC HEALTH submitted by JAMES BARRY GASCOYNE in partial fulfilment of the requirements for the degree of Master of Education in Educational Administration.

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Abstract

The purpose of this study was to determine if there is a relationship between sense of coherence and somatic health among teachers. A secondary purpose of this study was to evaluate which of the three sub-components of sense of coherence (comprehensibility, manageability, and meaning) best correlated with the somatic health scale.

Through the medium of a correlational study with 54 teachers who volunteered to complete the sense of coherence questionnaires and somatic health scales, it was determined that a moderate link existed between sense of coherence and somatic health. Of the three sub-components of sense of coherence, it was determined that the characteristic of manageability best correlated with the somatic health scale.

The findings of this study are in agreement with the literature related to the field of personality and somatic health. As a personality scale, the sense of coherence questionnaire was demonstrated to be a useful organon to measure the relationship between personality and health. The somatic health scale appeared to function well in its assigned task and the reported frequency of illnesses among teachers followed the trends in the literature on stress related illness and teaching.

The findings of this study suggest that sense of coherence may be useful in predicting somatic health among teachers. Further research should include multiple personality inventories and a variety of health measures.

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Chapter I

Introduction

Teaching is now considered among the high stress professions (Jevne & Zingle, 1991; Travers & Cooper, 1996). Expanding roles, increased class sizes, loss of control, guilt, and rapid changes in educational policy are some of the factors which contribute to the increasing levels of stress teachers experience today (Jevne & Zingle, 1991; Kropp & Hodson, 1995; Redgwell, 1991). Because of stress, a growing number of teachers are leaving the teaching profession, living with chronic illness, or being placed on long term disability (Ratsoy, 1986; Redgwell, 1991; Rosin, 1992; Young, 1982). Despite this trend, given identical working environments, workload, and occupational responsibilities, some teachers remain healthy while others get sick. Among the teaching ranks there are teachers who remain energized and healthy and there are teachers who are subject to physical and mental illness. Literature on occupational stress and stress management (e.g., Egdahl & Walsh, 1980; Hafen, Karren, Frandsen, & Smith, 1996; Hurrell, 1987; Lewis, Sperry, & Carlson, 1993; Rosin, 1992; Smith, 1993) suggests that differences in health outcomes can be attributed to individuals' personalities, in that, stress will affect people differently because of the personal characteristics they bring to the stressful situation. Certain personality traits act as a buffer (Hafen et al.,1996), reducing the perception and magnitude of the stressful stimuli. Antonovsky (1987) represented these personality traits within the "sense of

coherence" (SOC) concept. SOC is defined by three personality characteristics: comprehensibility, manageability, and meaning. According to Antonovsky (1987), these characteristics serve to mediate the impact of stress and, therefore, stress related illness.

Statement of the Problem

The purpose of this study was to determine if there was evidence of a relationship between sense of coherence and somatic health among teachers.

Sub-statements of the problem

The SOC scale developed by Antonovsky (1987) evaluated a person's overall sense of coherence. In addition, it measured three sub-components of a person's personality; these were comprehensibility, manageability, and meaning. In the present study, an evaluation of these three sub-components was conducted to assess the strength of their relationship to somatic health data collected from a personal health scale.

Substantive Hypothesis

If a teacher's SOC level is related to measures of physical health, a teacher with a high SOC level would be expected to display better health than a teacher with a low SOC level.

Of the three sub-components of the SOC scale, the literature suggests manageability to be most important in reducing the effects of stress (Bandura, 1977; Hafen et al.,1996; Kobasa, 1979; Scheir & Carver, 1987;). As a result, it

is expected that the manageability sub-component of the SOC scale will have a higher correlation with teacher health than the sub-components of comprehensibility and meaning.

Significance

As illustrated by current literature in the field of health psychology (e.g., Egdahl & Walsh, 1980; Hafen, et al., 1996; Hurrell, 1987; Lewis et al., 1993; Rosin, 1992; Smith, 1993) an important component of health is the ability to cope effectively with stress. An individual's SOC level may provide an indication of his or her ability to cope with stress in a healthy manner (Antonovsky, 1987).

To the field of health psychology, this study adds to the research exploring the links between personality and health. This study contributes: (a) information and feedback regarding the utility of the SOC personality scale, and (b) further study of the links between personality and health within the teacher population.

To the field of educational administration, this study adds to research conducted in the area of organizational psychology and stress. This study contributes: (a) information regarding the impact of stress on somatic health in the teacher population, and (b) insight into the personality variables which help to mediate the perception of stress among teachers.

Definition of Terms

Although the literature review provides details about the various concepts mentioned in the introduction to this study, it is important, for clarity to isolate definitions of personality and somatic health.

Personality. According to Smith (1993), personality is defined as patterns of thoughts which are enduring over the long term, giving us a predisposition to think, feel, and act in a particular way. These patterns are often referred to as personality characteristics, describing our ability to move through life and perform effectively. Many aspects of our personality are seen as stable while other facets are apt to change as circumstances change. In this study, SOC is used as an organon to measure certain personality characteristics thought to be associated with somatic health (Antonovsky, 1987).

Somatic health. Somatic health refers to a person's physical health as opposed to his or her mental or spiritual well-being. According to Haywood (1993) somatic health is determined by several factors including cardiorespiratory functions, immune system, nervous system, skeletal frame, gastrointestinal system, and muscle function. In this study, somatic health is indicated through 12 subjective self-reported ratings.

Chapter II

Review of the Literature

The review of the literature begins with an overview of the relationship between personality and health as it has developed in the field of health psychology. In addition to focusing on the research that has explored the links between stress related illness and personality, this chapter discusses the background surrounding stress as it relates to the teaching profession. As stated in the introductory chapter, teachers experience chronic high levels of stress and it is important that any study relating personality and health consider the variables associated with the ability of teachers to cope with stress.

Personality and Health

There is a growing body of research and related literature to support the concept that there are linkages between personality and health (e.g., Antonovsky, 1987; Bandura, 1977; Egdahl & Walsh, 1980; Hafen et al.,1996; Kobasa, 1979; Lewis et al., 1993; Rosin, 1992; Scheir & Carver, 1987; Smith, 1993). In general, the research suggests that some people have personal characteristics which may lead to illness while others display attitudes or behaviors that appear to play a proactive role in the prevention of stress related illness.

The idea that some people possess particular "traits" that make them susceptible to illness appears to have grown from studies in the area of depression (Lewis et al., 1993; McCrae & Costa, 1984).

> It is clear to some therapists and researchers who have worked extensively with depressed people that many of these people have a certain type of personality. This personality can be seen as providing a kind of "fertile soil" in which, given the necessary conditions, the "seed" of depressive disorder will be more likely to grow. (Champion, 1992, p. 39)

Presently, research has advanced beyond simply looking for depression related traits to trying to determine the relationships between specific diseases and one's personality. For example, Friedman (1991), pointed out numerous cases in which patients with like dispositions appeared to exhibit like diseases, adding that there was evidence that specific personality attributes lead to heart disease and cancer. He made specific connections regarding disease prone personality types, suggesting that people who repress emotions tend to get cancer and people who are aggressive tend to have heart problems. Study in this area has often been criticized for its lack of empirical data and weak methodology , however, there is a considerable

body of knowledge now in place from which to infer that a relationship between personal characteristics and health does exist (e.g., Digman & Takemoto-Chock, 1981; Hafen et al., 1996; Lewis et al., 1993; Smith, 1993)

Researchers studying the relationship between personality and somatic health (e.g., Antonovsky, 1987; Friedman, 1991; Kobasa, 1979; Scheir & Carver, 1987) have shown success in identifying characteristics that may relate to positive or negative health events. According to the literature, the most common characteristics related to positive health outcomes include optimism, commitment, sense of purpose or meaning, control, confidence, challenge, balance, and hope. These characteristics are identified in personality models such as a "hardy personality style" (Kobasa, 1979), a "sense of coherence" (Antonovsky, 1987), a "disposition towards optimism" (Seligmen, 1991), and a number of factors such as "self-efficacy" (Bandura, 1977) and "belief systems" related to cognition and coping mechanisms (Ellis, 1973).

Stress, Personality and Health

The research in health psychology suggests that the link between stress and health is mediated by personality (e.g., Antonovsky, 1987; Friedman, 1991; Kobasa, 1984; Scheir & Carver, 1987). When stress is placed upon people, their personalities will dictate how they respond. In turn, individuals may or may not have a physical reaction to stress. In a report on stress, Williams (1991) found that:

> The degree to which a stressor produces stress in an individual is a function of the individual's perception of the magnitude of the stressor, of his or her capability to deal with it, and with the threat inherent in the consequences of failure to meet the demand. (p.5)

Therefore, those personality characteristics identified in the literature as helpful (e.g., optimism, commitment, sense of purpose or meaning, control, confidence, challenge, balance, and hope) serve to "buffer" an individual from the negative impact of stress. These characteristics appear to do this by affecting the perception of threat and anxiety associated with stress (Lewis et al., 1993). Personality models such as Antonovsky's "Sense of Coherence" (1987) Seligmen's "optimism" (1991), and Kobasa's "Hardiness" (1984) suggest that a strong sense of control and meaning provided an individual with the ability to perceive stress as less harmful and to cope with stress in a proactive manner. This is not to say that an individual possessing these traits does not experience stress; rather, he or she is simply better equipped to cope (Antonovsky, 1987). For example, Antonovsky's Sense of Coherence (SOC) personality model (1987) is based on the premise that:

> The strong SOC person is not oblivious [to stress]. He or she, not frightened by disorder, either physical, psychological or social, will be alert to its existence and reasonably confident that more order can be induced and tend to bring this about. (p. 185)

Coherence. SOC represents a combination of personality traits used by Antonovsky (1987) to describe a person's general resistance to stress. SOC consists of: (a) comprehensibility, a sense that the stimuli derived from one's internal and external environments are structured, predictable, and explicable; (b) manageability, the belief that resources are available to meet the demands posed by these stimuli; and (c) meaning, the belief that these demands represent challenges, worthy of investment and engagement (Antonovsky, 1987. p. 19). The Sense of Coherence Concept is based on a salutogenic model of health and wellness (i.e., focusing on what keeps us well rather than ill). The three elements which make up SOC (comprehensibility, manageability and meaning) contribute to a person's overall ability to maintain good physical health.

Kobasa's concept of hardiness (1984), and Seligmen's notion of optimism (1991), adhere to the same theoretical framework, in that, stress is somehow mediated by certain personality characteristics. The concept of hardiness and optimism have become a popular way of defining a person's potential to avoid stress related illness (Hafen et al., 1996), as well as determining a person's approach to illness and recovery (Smith, 1993).

Hardiness. Developed by Kobasa (1984), the concept of hardiness represents three characteristics: (a) control, a belief in a person's ability to influence events; (b) commitment, an approach to life marked by curiosity and a sense of meaningfulness; and (c) challenge, or the expectation that change

is normal and stimulates development. Teachers who are considered "hardy" would respond to stress differently than may be expected, in that, they possess a sense of purpose that carries them through most stressful situations. For example, a change in the working environment, such as a dramatic increase in class size might be seen as a "challenge" to the hardy person.

Optimism. Seligmen (1991) suggested that many of the characteristics that have been identified as differentiating between positive and negative health outcomes may in fact be the result of a sense of optimism, or the expectation that good things will happen. According to Seligmen, teachers with high levels of optimism would simply believe that everything will work out in the end. Regardless of the stressful event, people with a high level of optimism refuse to complain or wear a frown. Seligmen's studies have demonstrated that having a high level of optimism promotes a "proactive" lifestyle rather then a "reactive" lifestyle. According to Seligmen (1991) this enables a person to "shrug-off" those elements of his or her life that cannot be controlled because the "optimistic" person is focused on the future, not dwelling on the past.

Stress and Stress Related Illness

In discussing the potential for personality to mediate stress related illness, it is necessary to review the current literature regarding how stress impacts upon the body and promotes illness. The relationship between stress,

personality and stress related illness is very complex and has been difficult to assess. However, the physiological changes that occur in relation to stress have been well documented.

Stress is the nonspecific response of the body to any demand made upon it (Barrow, 1994). In other words, the body pays a psychological and physical price when its internal balance is disrupted by a perceived threat, change or transition, and is called upon to act. Stress has been likened to the "fight or flight response," in which the body is mobilized for action. A number of physiological changes occur, including increases in muscle tension, heart rate, and blood pressure (Barrow, 1994)

Stress is a normal part of living and the stress response is helpful in many ways, for example, motivating a person to study or increasing alertness while taking a test or speaking in public. According to Vealey and Burton (1990), the problem occurs when stress exceeds a productive level and interferes with one's ability to think, remember, and focus on tasks. This is often referred to as anxiety or "bad stress" (Gould, Hodge, Peterson, & Giannini, 1987). Most people follow a stress curve" (Figure 1) which indicates peak performance with a gradual deterioration in function as stress increases.

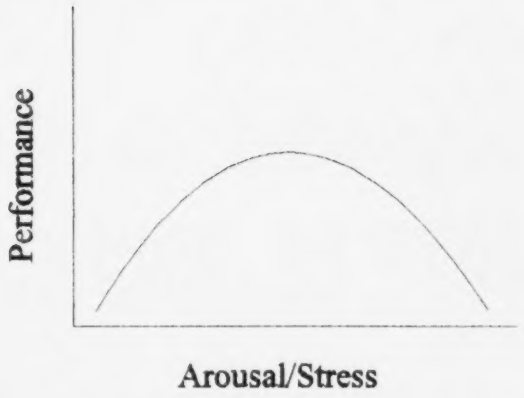

Figure 1. The stress curve. As stress increases to the right, a person initially responds through better performance but if stress continues to rise that person will eventually experience a decrease in performance.

Stress that is ineffectively managed and remains too high for too long can contribute to physical breakdowns of the body (Locke & Taylor, 1991). Examples of medical conditions that are related to stress include heart and circulatory diseases, ulcers, colitis, asthmatic conditions, and lowered immunity leading to infectious illnesses (Avison & Gottlib, 1994; Champion & Power, 1992; Dickman, 1988).

Stress is produced by both normal and unusual events as well as by both positive and negative occurrences. Just as a large class size might increase stress for a teacher so might positive experiences such as an appointment to an administrative position. Stress can be cumulative or it may be a part of a chronic stressor pattern (Smith, 1993). Stress is also a positive aspect of our total body function, as we need a certain amount of it to live (Brown, 1991).

As stated earlier, what is not needed is an overload of stress that the body is unprepared to handle. One, two, or maybe more stressful events can be handled by the normal body reaction as indicated by the response of the body's immune systems (Rosin, 1992). There comes a time, however, when the body and mind cannot cope with what is happening and the body begins to lose its resistance to stress related illness (Smith, 1993). It is at this time that the immune system starts to weaken and allows the organism to be invaded by illness and disease (Gould et al., 1987; Hafen et al., 1996; Vealey & Burton, 1990).

In addition to physical breakdown, continual exposure to "stress overload" may eventually result in cognitive fatigue (McCrae & Costa, 1984). Cognitive fatigue is related to the concept of "burn-out" which is defined in terms of three symptoms: (a) emotional exhaustion, or feeling drained and empty because of excessive work demands; (b) depersonalization, or

becoming insensitive, closed off, callous, cynical, or hostile toward others; and (c) low feelings of accomplishment, or feeling frustrated and helpless because efforts seem wasted and worthless (Smith, 1993).

The link between stress and illness has been explored among the teaching population. However, as with other groups, the relationship between stress and illness is difficult to measure and evaluate. Jevne and Zingle (1991) studied Alberta teachers on long term disability (LTD) in an attempt to find a correlation between the teacher's experience and the type of LTD they displayed. However, despite the variety of instruments used, the study hesitates to make any concrete conclusions. The study's inability to differentiate between physical illness and psychological illness contributed to the inconclusive results, in that, it is difficult to determine whether a physical illness was in fact the result of psychological stress.

Causality is difficult to demonstrate in evaluating and assessing the links between personality and stress related illness but there is no longer any doubt that a relationship exists (Hafen et al., 1996). Given that relationship, what are the factors which may contribute to the high stress levels found in the teaching profession and how do they relate to personality?

Travers and Cooper (1996) tried to isolate those variables which they believed were responsible for teacher stress in order to determine which teachers were more likely to develop physical illness as well as other problems associated with stress (i.e., burnout and depression). In their conclusion, they

concede that much of the stress outcomes are related to personality differences. "This 'person facet' plays a more important role in the resulting stress manifestations than features of the working environment itself" (p. 182). However, Travers and Cooper (1996) believed that the greatest strides towards reducing teacher stress can be made through the immediate reduction of stress related to the working environment. To understand the stress behind stress related illness as it relates to the teaching population an examination of stress that is unique to the teaching profession is required.

Occupational Stress

Occupational stress can be divided into four elements: (a) workload, (b) task responsibility, (c) environment, and (d) guilt. Each of these elements of occupational stress contributes, in part, to the total stress load carried by each teacher.

Workload. Smith (1993) defined workload as having three parts: (a) quantitative overload, (b) qualitative overload, and (c) work underload. Quantitative overload referred to a person's perception that he or she has too much to do in too little time. Although this form of stress may spark a procrastinator into action, it has the effect of generating anxiousness, anxiety, frustration, and panic. It is not by accident that armed forces around the world use quantitative overload to test the stress threshold of its recruits. To the classroom teacher who feels there is "never enough time in the day,"

quantitative overload develops a sense of urgency that can not be ignored. The beginning teacher is likely to experience this form of stress to a high degree but even a veteran teacher can "panic" (Locke & Taylor, 1991).

Qualitative overload stems from the perception that a person lacks the ability to complete tasks in accordance with internal or external expectations. In other words, teachers may feel they lack the skills to teach a math class or to meet the criteria for evaluation as laid out by a supervisor. In either case, the teacher is likely to feel anxious or frustrated. Often, qualitative overload may lead to a teacher simply giving up. Like a student conceding he or she "can't possibly pass an exam, " the teacher will throw up his or her hands and fail by default (Kahill, 1988). This form of stress is particularly common among teachers who have to teach an unfamiliar subject, as is often the case when the money to hire qualified teachers is in short supply.

Work underload relates to the concept of boredom (Ratsoy, 1986). It is a passive stressor, in that the actual absence of stressors results in stress. Whether a teacher is in a "rut," having taught the same subject for many years or simply finds the task of teaching too easy, he or she will likely experience frustration and anxiousness. Like a child who is bored with a toy or endlessly staring out the window on a rainy day, this teacher either needs a challenge or a new career.

Task responsibility. This aspect of occupational stress focuses on two factors: role ambiguity and what Kahill (1988) called "self-direction." Role ambiguity refers to the inherent lack of definition for the task of teaching. Teaching is a poorly defined role which is as dynamic as it is varied; as a result, no definitive description of the role of a teacher can be provided. To teachers, ambiguity is not only present in their job description but in their pedagogy as well, in that there may never be a practical and concrete guide to planning, evaluation, and teaching methodology (Travers & Cooper, 1996). For the beginning teacher, the ambiguity found in the actual practice of teaching can be overwhelming. Forced to define his or her own framework for classroom management and evaluation, the beginning teacher "re-invents the wheel" at the expense of exposure to incredible levels of stress (Kahill, 1988). Veteran teachers have learned to either ignore ambiguity or cope with it. Unfortunately, coping often means adopting a cynical and maladjusted attitude towards changes in the way one teaches. For example, to some teachers, it appears pointless to keep changing simply for the sake of change when what is required is discursive evidence that one way is the right way.

The second aspect of task responsibility is self-direction. Self-direction concerns the aspects of work that are tied to issues of control, challenge and mastery. As Mirowsky and Ross (1979) have stated, "low levels of such conditions produce a sense of powerlessness and alienation that color beliefs about control in other aspects of life" (p.118). Although it is not the intent of this

review of the literature to explore the numerous psychological constructs related to stress, it is sufficient to say that self-direction refers to a teacher's sense of self-efficacy (Bandura, 1977) and locus-of-control (Weiner, 1972). Weiner (1972) believed that how people attributed their actions and experiences determined if they were "proactive" or "reactive" to life's events. The locus-of-control chart shown in figure 2 indicates how an individual may attribute an experience. Depending on the attribution, an individual may perceive the situation as stable-internally controlled, stable-externally controlled, unstable-internally controlled, or unstable-externally controlled.

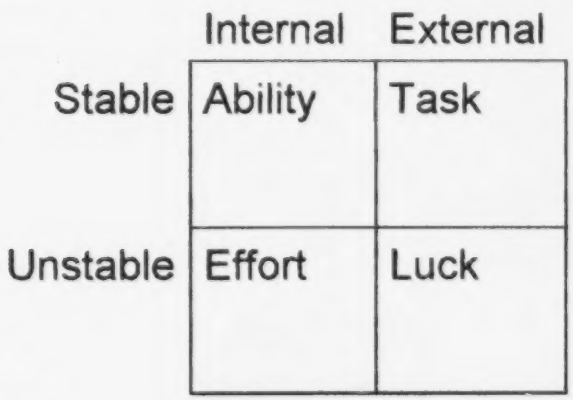

Figure 2. The Locus of control chart was used by Weiner (1972) to describe levels of personal control. People relate there perception of responsibility for an event as internally or externally controllable and stable or unstable over time. For example, effort is viewed as internally unstable.

Environment. The teaching environment comprises several variables that can lead to stress, such as: (a) the physical wear and tear related to being on one's feet all day and attuned to a barrage of stimuli; (b) the frustration of using inadequate resources, requiring the teacher to continually improvise; (c) interaction with staff, parents, students, teacher assistants and supervisors which may be stressful if there are conflicts; and (d) schools that are often uncomfortable, stuffy, and poorly lit.

Guilt. The teaching profession is humanistic and client focused. Success as an educator often stems from an ability to care about students and provide that human touch to an otherwise academic exercise (Kropp & Hodson, 1995). It is this need to care, unfortunately, which may generate the most powerful stressor of all: guilt. Because teachers care about their students, they tend to internalize responsibility for the success or failure of their students. Particularly at the elementary level, teachers may feel an enormous sense of responsibility for their students' growth and if some students fail, the teacher may bear considerable guilt (Travers & Cooper, 1996). If a student fails to achieve the level of performance that the teacher thinks he or she can perform at, that teacher may think that "I could have tried a little harder," or "I must not be a good teacher." If a teacher experiences some form of guilt related stress involving several students in each class on a regular basis, then that teacher is likely to be "crushed" by the weight of his or her guilt. In what could be called a "catch-22" a teacher can choose to stop caring and become

ineffective or continue caring and become ineffective due to the stress. Many teachers may struggle with this dilemma unaware of it.

Summary of Literature Review

Due to the complex relationships between personality, stress, and stress related illness, researchers have a difficult time trying to demonstrate causality between personality and somatic health. Although the literature supports the notion that stress often leads to illness and that stress can be mediated by certain personality characteristics, studying these relationships is difficult due to the number of external and internal variables that complicate any study in personality or personal perceptions. What remains is for researchers to identify those personality characteristics which "best" represent a buffer to stress and stress related illness. In doing so, the ability to "diagnose" an individual as either disease resistant or disease prone based on the degree to which he or she possesses certain personality characteristics may eventually develop (Friedman, 1991). As well, educators and the general public would be better prepared to recognize and develop those aspects of their personality which will help them prevent stress related illness.

This study examines the relationship between the personality characteristics found in Antonovsky's (1987) sense of coherence concept and somatic health. The next chapter focuses on the methods used to examine this relationship.

Chapter III

Method of the Study

Research Design

This study used a correlational research design. Data from the two questionnaires: Sense of Coherence and Somatic Health, were correlated using a Pearson product-moment correlation. The questionnaires were completed by 54 teachers from a large urban school district in Western Canada. Evidence of a potentially useful relationship was indicated by a correlation coefficient (r) of at least 0.33 ($\propto$=.05). The two scales used to collect data in the study were utilized for specific reasons outlined below.

SOC Questionnaire. The first scale, the Sense of Coherence Questionnaire (see Appendix A), was developed by Antonovsky (1987) to be used as an organon measuring a person's sense of comprehensibility, manageability, and meaning. These three personality traits are prominent in the literature related to personality and health (e.g., Antonovsky, 1987; Avison & Gotlib, 1994; Hafen et al., 1996; Kobasa, 1984; Scheir & Carver, 1987). Antonovsky's SOC questionnaire represents a measure of these characteristics using a 7-point Likert-type scale. The scale consisted of 29 questions, each question focusing on either comprehensibility, manageability or meaning. Built into the questionnaire are a number of questions which generate reversed scores and these scores had to be reversed in order to total

the questionnaire. Antonovsky's SOC questionnaire has been used in numerous studies and found to have a high level of reliability and validity. Antonovsky (1987) stated "the consistently high level of Cronbach's alpha, which ranges from .84 to .93, points to a respectable degree of internal consistency and the reliability of the instrument" (p. 82).

Somatic health questionnaire. The second scale, somatic health questionnaire (see Appendix B), was developed to assess 12 pathologies believed to be linked to stress. These pathologies were chosen because they were ubiquitous in recent studies on stress related illness (e.g., Barrow, 1995 ; Hurrell, 1987; Jevne & Zingle, 1991; Kobasa, 1984; Smith, 1993; Travers & Cooper, 1996; Witmer & Sweeney, 1992). The scale was adopted from these previous studies using a 5-point Likert-type scale measuring the frequency of a pathology's occurrence. The health scale consisted of 12 questions which asked respondents to indicate the frequency, if any, of occurrence of the 12 stress related illnesses. The Somatic health scale uses a subjective personal report scale to indicate levels of somatic health. This form of questioning has been shown to be as reliable as medical reports in determining the somatic health (Lewis et al., 1993).

Sample and Population

As teachers were the target population of this study, a volunteer sampling of teachers was drawn from a large urban school district in Western Canada to complete the questionnaires. The questionnaires were distributed to

eight schools in the district, including two elementary schools, five junior high schools and one high school. The eight schools were chosen because the principals were known to be open to research being conducted within their schools. In addition to a cover letter attached to each questionnaire (see Appendix C), the principals agreed to introduce the study to staff during their next regularly scheduled staff meeting. Of the eight schools, two of the junior high schools did not return any questionnaires. The principals of these two schools explained that their staffs were very busy and would not have time to complete the questionnaires.

Although this study attempted to draw the sample from three school levels (elementary, junior high, and high school), research has shown that there is no apparent difference in the perceived stress level among teachers in relation to grade taught, gender or years of experience (Jevne & Zingle, 1991; Travers & Cooper, 1996; Young, 1982; Williams, 1991). Although some studies involving teachers on long term disability report that many teachers experienced burn-out or cognitive fatigue after an average of 15 to 20 years of teaching (e.g., Jevne & Zingle, 1991; Redgwell, 1991; Rosin, 1992; Young, 1982) this factor was not treated separately as stress related illness is more a function of coping style and personality (Antonovsky, 1987; Hafen et al., 1996; Kobasa, 1984) than years of experience. Consequently, no attempt was made to control for years of experience when drawing the sample.

Prior to beginning the research, the study conformed to the requirements of an ethical review from the Department of Educational Policy Studies at the University of Alberta as well as a review of the proposed research by the school district in which the study was conducted.

Data Collection

After receiving permission from various schools to distribute the questionnaires to staff, the questionnaires were delivered to the schools and returned by mail. The data for the study were gathered from two questionnaires: the SOC questionnaire and the somatic health scale. Attached to each questionnaire was a letter of introduction (see Appendix C) which explained the purpose of the study, provided instructions, and specified a return date. The three components of the questionnaire were attached together and 200 copies were delivered to eight schools. To improve the rate of return, those questionnaires that were delivered using the Canadian Postal Service were provided with an addressed, stamped, return envelope. Fifty-four questionnaires were returned for a return rate of 27%.

Data Analysis Techniques

The analysis of the data involved computing the correlation between the data from the SOC questionnaire and the somatic health scale as well as correlating each of the three personality characteristics that make up SOC (comprehensibility, manageability, and meaning) with the somatic health scale.

SOC and somatic health. Data from the two questionnaires, SOC and somatic health, were correlated using a Pearson product-moment correlation. The data from the questionnaires were represented by a total score for each of the two variables. In the case of the SOC questionnaire, the data were gathered from 29 questions. From the somatic health scale, data were gathered from 12 questions. The data from the two questionnaires were compiled and then analyzed by calculating a Pearson product-moment correlation between the two sets of data. The correlation coefficient was determined using the Statistical Package for the Social Sciences (SPSS) version 6.1 for Windows computer software program.

Personality characteristics and the somatic health scale. Each of the three characteristics that make up SOC were individually correlated with the data from the somatic health scale in order to determine which, if any, of the three characteristics (comprehensibility, manageability, and meaning) demonstrated the highest correlation. The correlational comparison between each of the individual personality characteristics and the somatic health scale was performed using the same technique as used with the correlation between SOC questionnaire and the somatic health scale (i.e., Pearson product-moment correlation). The SOC questionnaire was designed by Antonovsky (1987) to include three types of questions each question addressing one of the three characteristics which make up the SOC concept. Each of the 54 questionnaires that were returned received a sum score representing the total

SOC score and then the questionnaires were further analyzed to indicate a score for each of the three personality characteristics. To make interpretation of the scale more intuitive, all scores from the somatic health questionnaire were transformed by multiplying by -1.

Validity

This study explored a simplistic premise, in that, personality is linked to somatic health. However, this study did not pretend to be sensitive to the countless variables that affect the relationship between a person's personality and his or her somatic health; rather, this study simply attempted to explore the possibility that a link exists. Any results from such a study must be viewed within the narrow context of (a) the mono-method quantitative research design, (b) the reliability of the instruments to detect what this study intended, and (c) sampling bias due to the nature of the volunteer sample.

The next chapter reports on the findings of this study. Included is the correlations between SOC and the somatic health scale, and the correlation between comprehensibility, manageability, meaning and somatic health scale.

Chapter IV

Findings

This chapter is divided into two sections. The first section relates to the correlation between SOC and somatic health, and the second section relates to the correlations among the elements which make up SOC (comprehensibility, manageability, and meaning) and somatic health.

SOC and Somatic Health

The main purpose of this study was to examine the nature of the relationship between SOC and somatic health within a group of teachers. As described in the method section, evidence of a useful correlation existed if the value of (r) using Pearson Product-moment correlation was greater than or equal to .33 ($\propto$=.05 one-tailed test).

The scores from the SOC questionnaire (see Appendix D) ranged from a low of 112 to a high of 175. The higher the SOC score the greater one's sense of coherence. The mean for the SOC questionnaire was 149 and the standard deviation equalled 16.2. Table 1 displays the data grouped in 10-point frequency intervals.

Table 1

Raw Scores From the SOC Questionnaire Grouped in Ten-Point Frequency Intervals

Range	n	% of Total*
≤110	0	0%
111-120	2	4%
121-130	6	11%
131-140	9	17%
141-150	9	17%
151-160	14	26%
161-170	8	15%
171-180	6	11%
≥181	0	0%

*rounded to the nearest whole number

The data from the health questionnaire (see Appendix D) were collected and then correlated with the data from the SOC questionnaire. The scores ranged from 2 to 25. The higher the score on the somatic health scale the greater one's experience with illness. The mean value for the somatic health scale was 10.1. The standard deviation for these data was 4.7. The data from the somatic health questionnaire are grouped in 5-point frequency intervals to demonstrate the distribution of scores in Table 2.

Table 2

Raw Scores from the Somatic Health Scale as Grouped in 5-Point Frequency Intervals

Range	n	% of Total*
0 - 4	5	10%
5 - 9	22	41%
10 - 14	19	35%
15 - 19	6	11%
20 - 24	1	2%
25 - 29	1	2%

* rounded to the nearest whole number

Following the compilation of the data from the two testing instruments, the SOC scale and the somatic health scale, the data were analyzed using the SPSS computer software program. It was determined that the correlation coefficient between SOC and somatic health was .42.

Since high scores on the transformed somatic health scale denote a low level of health and high SOC scores denote a high sense of coherence, the relationship between the transformed somatic health scale and the SOC variables was a positive one, as expected.

It was determined that a moderately strong correlation existed between SOC and somatic health among the group of teachers involved in this study.

SOC Elements and Somatic Health

As mentioned earlier, the SOC questionnaire is composed of three elements which Antonovsky (1987) believed determined a person's overall SOC. To review, these three elements (comprehensibility, manageability, and meaning) exist within each person to some extent. For the purpose of this study it was hypothesised that one of these three elements would correlate higher with the somatic health scale than the others: that being the element of manageability. Using the same statistical method as was used to determine the primary correlation between SOC and somatic health, each of the elements of SOC were correlated with the somatic health scale. Descriptive statistics for each of these scales along with a Pearson-r correlation coefficient for each of the scales with somatic health are provided in table 3.

Table 3

Summary of Statistics for the Elements of SOC

Element	n	Mean	Range	Std. Dev.	*Coefficient (r)
Comprehensibility	54	51	30-65	8.9	.25
Manageability	54	53	41-64	5.4	.40**
Meaning	54	45	30-59	7.1	.34**

*Correlation with somatic health

**Significant at the $\propto$=.05 level

In the correlation between each of the three elements that make up SOC (comprehensibility, manageability, and meaning) and the somatic health scale, it was determined that manageability had the highest correlation (r=.40) among the elements involved. In addition, the element of meaning was also significant (r=.34) at $\propto$=.05. The overall correlation (r=.42) was found to be greater than the mean of the SOC sub-scale correlations with somatic health because of variations of the scores for the individual sub-scales

Somatic health scale frequencies. As explained in chapter 3, the somatic health scale listed 12 physical conditions related to stress related illness and a 5-point Likert-type scale to indicate the frequency of the conditions (see Appendix B). In calculating the scores from the somatic health scale it became apparent that several of the stress related conditions appeared more than others. All of the teachers participating in the study reported colds as a condition at some level of frequency. Four stress related conditions were indicated as occurring in some degree of frequency in over 80% of the questionnaires. These stress related conditions were: (a) headaches or migraines, (b) sleeping disorders, (c) physical tension, and (d) muscle cramping. Table 4 reflects the frequency of the stress related conditions as a percentage of that conditions occurrence among the 54 questionnaires.

Table 4

Frequency of Occurrence

Condition	% of occurrence
Colds	100%
Headaches/Migraines	85%
Sleeping Disorders	85%
Physical Tension	85%
Muscle Cramping	81%
Throat Inflammation	58%
Gastrointestinal Problems	54%
Respiratory Problems	27%
High Blood Pressure	27%
Liver/Kidney Problems	8%
Heart Disease	4%

In addition to the frequency of occurrence among the respondents, each stress related condition can be represented by a table which indicates the degree of frequency reported by the participants in the study. Table 5 shows the reported frequency of each stress related condition as it appeared on the Likert-type 5-point scale.

Table 5

The Frequency Percentages of Responses

Conditions	Never	Rarely	Occasionally	Frequently	Chronic
Colds	0.0%	39%	42%	0.0%	4%
Headaches or Migraines	15%	65%	12%	8%	0.0%
Sleeping Disorders	15%	50%	19%	15%	0.0%
Physical Tension	15%	23%	39%	19%	4%
Muscle Cramping	19%	39%	15%	19%	8%
Throat Inflammation	42%	31%	19%	8%	0.0%
Gastro-intestinal	46%	31%	8%	15%	0.0%
Obesity	54%	19%	19%	8%	0.0%
High Blood Pressure	73%	19%	4%	0.0%	4%
Respiratory Problems	73%	23%	4%	0.0%	0.0%
Liver/Kidney Problems	92%	0.0%	4%	4%	0.0%
Heart Disease	96%	4%	0.0%	0.0%	0.0%

The four stress related conditions that occurred the least were: (a) high blood pressure, (b) respiratory problems, (c) liver and kidney problems, and (d) heart disease. The four conditions which were most frequent (i.e., were

experienced the most either occasionally, frequently or chronically) were: (a) physical tension, (b) colds, (c) muscle cramping, and (d) sleeping disorders. Table 6 shows displays the total percentage of occurrence of these four conditions.

Table 6

Percentage When Totalling Frequency of Condition Including Occasional, Frequent and Chronic Occurrences

Condition	% of Occurrence
Physical Tension	62%
Colds	46%
Muscle Cramping	42%
Sleeping Disorder	34%

Summary of Findings

Through this study's correlational design it was determined that a moderate relationship exists between sense of coherence and somatic health ($r=.42$, $\propto=.05$). Of the three personality variables that make up SOC (comprehensibility, manageability and meaning) it was determined that manageability had the highest correlation with the somatic health scale ($r=.40$) and that meaning had the second highest and significant correlation ($r=0.34$, $\propto=.05$) with somatic health.

Discussion of the Findings

As a result of this study's findings, several inferences are considered. Among these is significance of the correlations and an evaluation of the utility of SOC questionnaire and the somatic health scale in studying personality and somatic health.

Significance of correlation. The correlation between the SOC questionnaire and the somatic health scale (r=.42) suggests that a relationship exists between a teacher's SOC and somatic health. This relationship is in agreement with Antonovsky's (1987) research into personality and physical health; furthermore, it coincides with the literature in health psychology that supports the existence of a relationship between personality and somatic health (e.g., Hafen et al., 1996; Lewis et al., 1993; Smith, 1992). However, given the nature of this study, it is impossible to state whether this correlation means that a teacher with a low SOC score is more likely to experience stress related illness as a result of his or her low SOC score, some other variable, or even if poor health leads to a poor SOC. For example, poor health habits such as smoking, alcohol consumption, and bad diet, or a family history of health problems, such as heart disease and gastrointestinal problems, may prove to be more important in deciding the somatic health experience of a teacher than the teacher's SOC level. It is also possible that poor health could result in a poor SOC through a "self-fulfilling prophecy" mechanism. As well, environmental conditions such as poor lighting, poor air quality, and confined

spaces are typical of schools (Travers & Cooper, 1996) and may lead to problems such as headaches, respiratory problems and higher incidence of contagious disease.

Future health status. It is debatable whether the SOC questionnaire has utility in determining the future health status of teachers for a number of reasons. If one assumes, as does Antonovsky (1987), that the SOC personality characteristics are stable and consistent over time, than one has to conclude that a teacher's health experiences are not likely to change over time either. However, many researchers (e.g., Ellis, 1973; Kobasa, 1984) believe that personality can be changed. Consequently, if teachers change those aspects of their personality that leave them susceptible to stress related illness, then it may follow that those teachers would likely experience fewer stress related illnesses in the future.

As the stress that leads to stress related illness is often a result of the occupational factors discussed in chapter 2 (e.g., Lewis et al., 1993; Travers & Cooper, 1996), it follows that teachers may simply remove themselves from a stressful situation into one that is less so. Consequently, a teacher's SOC score may remain unchanged but his or her experience with stress related illnesses may have decreased considerably. For example, a teacher in an elementary school may experience more colds than a high school teacher

simply because of the physical contact with smaller children. If that teacher transfer into a high school position, he or she may experience less colds simply because of the switch in grades and their SOC level has not changed.

Causality. The SOC questionnaire is not able to detect the "cause" of stress related illness; rather, it merely attempts to detect an individual's potential to experience illness which is related to stress. The Antonovsky (1987) questionnaire is based on the premise that certain people posses personality characteristics that help to reduce the perception of stress and, therefore, stress related illness. The SOC questionnaire does not pretend to describe causal links between personality, stress, and somatic health, rather, it is simply a tool with which to gauge people's ability to maintain somatic health. However, in addition to Antonovsky's (1987) research, the literature review demonstrated that there are a considerable number of studies supporting the existence of a relationship between personality and somatic Health. The bulk of these studies (e.g., Digman & Takemoto-Chock, 1981; Hafen et al., 1996; Lewis et al., 1993; Smith, 1993) support the idea that personality works to reduce the perception of stress, and in turn, stress related illness. It remains difficult to demonstrate the existence of a direct link between personality, stress, and somatic health because of difficulties such as (a) working with and analyzing perceptual information, and (b) the inability to control for numerous variables that may influence the research.

Long term disability. In regards to using the SOC questionnaire as a tool for gathering information on teachers on LTD, it would only be useful as one diagnostic instrument among many. In their study of teachers on LTD, Jevne and Zingle (1991) found that no one instrument provided insight by itself; rather, it was a combination of tools which helped to shape their conclusions. In addition, it would be difficult to determine if an individual on LTD suffering from depression or a severe illness would have scored differently on the SOC questionnaire prior to the onset of the disease. However, the SOC questionnaire may have value as a predictor of future health status for depression prone people.

As was described in the literature review, research in the area of personality and somatic health began with studies involving people suffering from depression (Lewis et al., 1993; McCrae & Costa, 1984) and it was found that depression prone people tended to get ill more so than the "normal" population. As studies in depression demonstrate a depression prone person has stable personality characteristics (Engle, 1968) it is likely that the SOC questionnaire would detect the future health status of depression prone people before they are placed on LTD.

Manageability and somatic health. Although Antonovsky (1987) recognized three personality characteristics in his SOC concept, on the basis of the findings in the present study it is clearly the element of manageability which has the highest correlation with somatic health in this study. Of the three

elements which make up SOC (comprehensibility, manageability, and meaning), manageability had the highest correlation with the somatic health scale (r=.40). This outcome was not surprising and had, in fact, been hypothesized in chapter 1. Manageability encompasses the aspects of personal control (Hafen, et al., 1996) that allows a person to be proactive rather than reactive to life events. People with a high level of manageability are able to perceive the world and themselves as controllable and solvable. In coping with stress, a teacher with a high level of manageability may be better equipped to take control over his or her responses to that stress and make decisions based on values and principals (Hafen et al., 1999). If teachers are unable to maintain personal control then those occupational stress factors discussed in the literature review (e.g., workload, environment and guilt) may quickly overwhelm them.

Meaning and somatic health. The second highest significant correlation was between meaning and somatic health (r=.34). Although it had a lower correlation than manageability, meaning is an important indicator of peoples' ability to maintain their SOC scores over the long term. Antonovsky (1987) stated that it was the element of meaning which provides an individual with the motivation to succeed over the long term: "The motivational component of [meaning] seems most crucial. Without it, being high on comprehensibility or manageability is likely to be temporary" (p. 22). It is the total SOC score which

reflects the relationship between SOC and somatic health but the element of meaning may provide an indication of peoples' ability to maintain an SOC score over the several years.

The link between SOC and somatic health. As discussed earlier, there is not a direct link between a person's SOC score and their ability to avoid illness. A person with a low SOC score is not a guarantee that he or she will get sick. It is difficult to say whether the correlations found in this study mean that a teacher with a low SOC score is more likely to experience stress related illness as a result of his or her low SOC score, or as a result of other variables that have been discussed in this study (e.g., accidents, family history, and environment), or even whether poor health leads to a low SOC. The SOC scale simply serves as an indicator that such a relationship between personality (manageability in particular) and illness may exist.

Summary of Discussion

This study determined that a relationship exists between a teacher's SOC and the somatic health scale. As a result, this study adds to the growing literature that points to a relationship between personality and health. This literature (e.g., Antonovsky, 1987; Friedman, 1991; Kobasa, 1984; Scheir & Carver, 1987), suggests that this relationship exists because of the ability of personality to mediate the impact of stress. Consequently, testing instruments such as the SOC questionnaire may serve to indicate a person's ability to experience less stress and avoid stress related illness.

Chapter V

Conclusions and Recommendations

Introduction

The main purpose of this study was to determine if a relationship exists between sense of coherence and somatic health among teachers. It was hypothesized that if a teacher's SOC level was related to measures of physical health, a teacher with a high SOC level would be expected to display better health than a teacher with a low SOC level. In addition to the primary correlation between SOC and the somatic health scale, this study evaluated which of the three sub-components of SOC (comprehensibility, manageability, and meaning) best correlated with the data collected from the somatic health scale. In this regard it was hypothesized that the manageability element of SOC would best correlate with the somatic health scale.

Through the medium of a correlational study between SOC and somatic health it was determined that a moderate link existed among the group of teachers involved in the study. Of the three sub-components of the SOC scale (comprehensibility, manageability, and meaning), manageability has a higher correlation with somatic health ($r=.40$ $\propto=.05$) than the sub-components of comprehensibility and meaning. However, meaning was also found to be significantly ($\propto=.05$) correlated to somatic health ($r=.34$). From these results conclusions and recommendations can be made for further study. This chapter

begins by making conclusions based on this study's findings, continues with recommendations for further research, and concludes with recommendations for practice.

Conclusions

As a result of this study's findings there are comments, questions and considerations which deserve attention.

1. The findings of this study are in agreement with the literature related to the field of personality and health. As a personality scale, the SOC questionnaire proved a useful organon to measure the relationship between personality and somatic health. The somatic health scale appeared to function well in its assigned task and the reported frequency of illnesses followed the trends in the literature on stress related illness and the teaching (e.g., Travers & Cooper, 1996; Rosin, 1992).

2. Although the results of this study agree with the literature related to personality and somatic health, is the SOC questionnaire the best instrument for this type of study? The SOC scale concentrates on three characteristics yet this study found that only two of them, manageability and meaning, correlated significantly with the somatic health scale. Researchers such as Kobasa (1984) and Friedman (1991) have developed personality scales that focus on

personality characteristics similar to Antonovsky's (1987) SOC. This study may have been strengthened had these questionnaire been used in conjunction with the SOC questionnaire.

3. The somatic health scale was representative of the literature on stress related illness (e.g., Travers & Cooper, 1996; Rosin, 1992) yet it is a single measure. Likely, this study would have been strengthened, to avoid a mono-method bias, had a variety of scales been used including both medical status and self-report scales.

4. The sample size was acceptable for a study of this type, however, a larger sample would have increased the ability to generalize the findings, In addition, the sample was not a true random sample as the sample was drawn from volunteers. Consequently, the results of the findings are based upon only the 27% of teachers responding. This may say something about the personalities of the respondents. Perhaps the respondents are interested in the topic because they are experiencing stress or these respondents may be those best able to cope with stress and consequently have the time to participate in research studies. Of the 73% who did not respond, many may be to "stressed" to bother. This study would be strengthened by using a true random sample.

5. Despite the limitations mentioned above, SOC measure could be used in schools to identify teachers susceptible to stress related illness. In turn, those

teachers who score particularly low (bottom 10-20%) on the SOC questionnaire may benefit from workshops designed to increase their stress coping skills.

Recommendations for Further Research

From the findings of this study a number of recommendations for further research can be made.

1. In studying the relationship between personality and somatic health, use more than one personality questionnaire. Many researchers in the field of health psychology focus on different aspects of personality (e.g., optimism, personal control, meaning). By using more than one scale, the study may be able to isolate one or two characteristics from different studies that have a high correlation with somatic health. As a result, such a study would help to determine which personality characteristics are most important when studying the relationship between personality and somatic health.

2. Draw a true random sample of the teacher population. Use a stratified random sample to account for teacher demographics (e.g., age, grade, experience, location, climate). In addition to these aspects of the work environment include concentration of various industries such as petroleum, forestry and agriculture which may influence health. Such a sample would provide researchers with data regarding possible intervening variables related to the relationship between teacher personality and somatic health.

Demographics may affect the results of this study and although earlier research suggests that factors such as age, teaching assignments, and school location are unimportant when considering the relationship between personality and stress (Jevne & Zingle, 1991; Travers & Cooper, 1996), these variables and others likely become important when considering personality and somatic health?

3. A longitudinal study which evaluates changes in occupational stress as it relates to personality measures and somatic health would provide information regarding the ability of personalty to mediate stress over time and in various conditions. Such a study may allow researchers to better predict which personalities lead to illness over time.

4. As indicated by the raw data, some teachers had a high SOC score and experienced excellent somatic health. The question of "Is this a function of personality or a function of other variables such as perception of health?" ought to be addressed. Through interviewing these teachers, researchers may develop a better idea of what aspects of personality keep teachers healthy.

Recommendations for Practice

Given the conclusions, the findings of this study suggest the following recommendations for practice.

1. Teachers should become aware of their ability to cope with stress. Personality measures such as the SOC questionnaire can help teachers to

understand their vulnerability to stress related illness. Although there are a number of demographic variables such as age, years of experience, and environment which have an effect on stress levels, teachers need to be aware that their personality may influence their coping style.

2. Teachers should become proactive in their development of stress coping skills. Certain personality characteristics which help reduce stress can be learned. Characteristics such as optimism (Seligmen, 1991) and manageability (Antonovsky, 1987) help reduce the perception of stress (Hafen et al., 1996) and can be learned and practiced.

3. Teachers should participate in wellness workshops and stress resiliency seminars on a continual basis to develop effective stress coping skills. Personality characteristics such as optimism and manageability do not change easily (Hafen et al., 1996), so any attempt to develop personality characteristics requires a long term effort.

4. Administrators should provide for the training of teachers and principals. Both time and money must be in place in order for teachers to become involved in programs which (a) increase awareness of stress related illness and (b) develop stress resiliency.

5. Policy makers in education should be convinced that the money that is currently being spent on private counselling and LTD programs would quickly be recovered through the implementation of a province wide stress resiliency program.

6. Educational practitioners should develop seminars and workshops that focus on the development of stress resiliency. Gather the current literature on personality and health and develop a comprehensive program designed to reach the teacher population. The program should be structured to allow for (a) short "awareness" workshops that can be completed in an afternoon, (b) seminars and workshops that carry on over the school year, and (c) retreats that teachers can take advantage of over the summer months.

Chapter VI

Personal Reflections

Introduction

Because these are my own ideas, conjectures and speculations I am purposely switching to first person. It is appropriate that I speak in this chapter in a more personal tone considering the nature of the topic. This chapter focuses on the concept of stress resiliency and how teachers can learn to develop aspects of their personality which will help them to maintain good health and avoid stress related illness. Prevention of disease and the focus on what keeps us well is what Antonovsky (1987) refers to as the salutogenic model of health. It is in keeping with the spirit of this concept that I wrote this chapter.

Developing the Stress Resistant Personality

As discussed in chapter 2 of this study, the idea of a stress resistant personality is best represented by three theories: (a) Kobasa's (1984) concept of Hardiness, (b) Seligmen's (1991) theory of Optimism, and (c) Antonovsky's (1987) Sense of Coherence concept.

The concept of hardiness, optimism, and sense of coherence are similar in several respects, most importantly the need to feel in control and have a sense of purpose. This sense of personal control and meaning are

important components to a person's "stress resilience." Essentially, a person with a high level of stress resilience moves through life less likely to experience stress related illness. A resilient person is not oblivious to stress; rather, he or she is more likely to define stressful situations with hope and excitement instead of hopelessness and distress. People with a high level of resilience react to a negative stimulus with the knowledge that they are ultimately in control of their response. As a result, stressful situations may be perceived as less threatening and cause little physiological damage. Hafen and his colleagues (1996) sum up the characteristics of a stress resilient person (pp. 287-288), these include:

1. The drive to personal control and integrity. The most important of the stress resilient characteristics, a stress resilient personality is defined by a sense of control over one's responses to external situations, as opposed to trying to control the external situation itself. Antonovsky (1987) utilizes the term manageability to encompass the framework of personal control.
2. A feeling of connectedness and acceptance. A stress resilient personality is defined by a sense of connectedness to one's self and to other people. Antonovsky (1987) utilizes the term comprehensibility to explain this dimension of stress resilience.

3. Movement through life with meaning and purpose. A stress resilient personality is defined by a caring sense of purpose, a vision of one's potential, and a giving of one's self. Frankl (1984) believed that finding life meaningful meant finding meaning in stress and suffering. Antonovsky (1987) argues that it is this sense of meaning that provides a focus for personal control.

4. A sense of optimism and hope. A stress resilient personality is defined by positive expectations for the future and the ability to envision positive outcomes. Seligmen (1991) argues that an enduring sense of optimism is the primary indicator for good health as well as the ability to fight disease.

What researchers are suggesting (e.g., Antonovsky, 1987; Hafen et al., 1996; Kobasa, 1984; Lewis et. al., 1993; Seligmen, 1991; Schier & Carver, 1987; Smith, 1993; Travers & Cooper, 1996) is that people possessing certain strong personality characteristics (e.g., personal control, connectedness, meaning, and optimism) are more likely to define stress with hope and confidence instead of hopelessness and disillusionment. As a result, these personality characteristics, or lack there-of, will have a "controlling" effect that regulates the impact of stress on the body.

Every one of us has some degree of resilience and each of the characteristics of resilience exists on a continuum. For example, some people may have a low sense of meaning in their lives yet have a great deal of personal control; or, some people may lack personal control and confidence yet feel very connected within their community. Those teachers who do not have a "stress resilient personality" do not have to "sit around" and wait to get sick since components of resiliency can be learned.

Antonovsky (1987), Hafen et al., (1996), Kobasa (1984), and Seligmen (1991) agree that people have the ability to grow and develop their abilities to withstand stress, particularly one's sense of personal control. These authors tell us that the path toward resiliency begins with the following:

1. Recognize the strengths and weaknesses of your personality. Determine which components of stress resiliency you need to develop and which components are already in place. You may find, for example, that you are generally optimistic about your life and your future but lack the sense of purpose to drive you to greater levels of personal control.
2. Begin to change those beliefs about ourselves or events which serve to hinder your ability to cope with stress, using proactive language and empowering images to describe our thoughts and feelings when in stressful situations. Instead of putting yourself down using negative language such as "the students make me so mad," or seeing yourself "reacting" to stressful

situations, try giving yourself some breathing room and quit trying to be "perfect." Visualize yourself taking control of your response to stressful situations (as opposed to the situation itself) and use proactive language such as "I am the master of myself, and I will choose how I will respond to the events around me."

3. Restructuring the way you look at stressful situations. Reframing how one looks at stressful stimuli may be a lot quicker solution than trying to change the source of the stimuli. For example, supervision can be a waste of valuable planning time, or it can be an "opportunity" to build relationships with the students as you walk around.

4. Accepting the fact that although you may not be able to influence all the events around us, you have the ultimate control within you to choose how you "react" to those events. Unlike the other members of the animal kingdom, humans have the ability to decide how they want to react to the stimuli around them. Unfortunately, we occasionally surrender this ability and experience a loss of control over our response to people and situations (if we didn't, life would be pretty dull). The important point to remember is that while you work to maintain your sense of personal control, you will go a long way toward stress resilience if you give up trying to control everyone else and everything else around you.

The field of personality and health is growing everyday and the task for leaders in education is to draw the literature together and develop workshops and programs that are useful to teachers. It is clear that the education profession has spent far to much time simply studying the effects of stress on its members and must now turn its efforts towards a salutogenic model of wellness. The concept of stress resiliency embodies this approach and needs to be developed into a program which meets the needs of teachers. An important part of this program will be increasing the self-awareness of teachers to their vulnerability to stress related illness. The SOC measures used in this study represent a starting point for this understanding.

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Appendix A

SOC Questionnaire

Here is a series of questions relating to various aspects of our lives. Each question has seven possible answers. Please mark the number which expresses your answer, with numbers 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1; if the words under 7 are right for you circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

1. When you talk to people, do you have the feeling that they don't understand you?

1	2	3	4	5	6	7
never have this feeling						always have this feeling

2. In the past, when you had to do something which depended upon cooperation with others, did you have the feeling that it:

1	2	3	4	5	6	7
surely would not get done						surely would get done

3. Think of the people with whom you come into contact daily, aside from the ones to whom you feel closest. How well do you know most of them?

1	2	3	4	5	6	7
you feel that they're strangers						you know them very well

4. Do you have the feeling that you don't really care about what goes around you?

1	2	3	4	5	6	7
very seldom or never						very often

5. Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?

1	2	3	4	5	6	7
never happened						always happened

6. Has it happened that people whom you counted on disappointed you?

1	2	3	4	5	6	7
never happened						always happened

7. Life is:

1	2	3	4	5	6	7
full of interest						completely routine

8. Until now your life has had:

1	2	3	4	5	6	7
no clear goals or purpose at all						very clear goals and purpose

9. Do you have the feeling that you are being treated fairly?

1	2	3	4	5	6	7
very often						very seldom or never

10.In the past ten years your life has been:

1	2	3	4	5	6	7
full of changes without your knowing what will happen next						completely consistent and clear

11. Most of the things you do in the future will probably be:

1	2	3	4	5	6	7
completely fascinating						deadly boring

12. Do you have the feeling you are in an unfamiliar situation and don't know what to do?

1	2	3	4	5	6	7
very often						very seldom or never

13. What best describes the way you see life:

1	2	3	4	5	6	7
one can always find a solution to painful things in life						there is no solution to painful things in life

14. When you think about life, you very often:

1	2	3	4	5	6	7
feel how good it is to be alive						ask yourself why you exist at all

15. When you face a difficult problem the choice of a solution is:

1	2	3	4	5	6	7
always confusing and hard to find						always completely clear

16. Doing the things you do every day is:

1	2	3	4	5	6	7
a source of deep pleasure and satisfaction						a source of pain and boredom

17. Your life in the future will probably be:

1	2	3	4	5	6	7
full of changes without your knowing what will happen next						completely consistent and clear

18. When something unpleasant happened in the past your tendency was:

1	2	3	4	5	6	7
"to eat yourself up" about it						to say "ok, that's that, I have to live with it," and go on

19. Do you have very mixed-up feelings and ideas?

1	2	3	4	5	6	7
very often						very seldom or never

20. When you do something that gives you a good feeling:

1	2	3	4	5	6	7
it's certain that you'll go on feeling good						it's certain that something will happen to spoil the feeling

21. Does it happen that you have feelings inside you would rather not feel?

1	2	3	4	5	6	7
very often						very seldom or never

22. You anticipate that your personal life in the future will be:

1	2	3	4	5	6	7
totally without meaning or purpose						full of meaning and purpose

23. Do you think that there will always be people whom you'll be able to count on in the future?

1	2	3	4	5	6	7
you're certain there will be						you doubt there will be

24. Does it happen that you have feelings that you don't know exactly what's about to happen?

1	2	3	4	5	6	7
very often						very seldom or never

25. Many people, even those with a strong character, sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1	2	3	4	5	6	7
never						very often

26. When something happened, have you generally found that:

1	2	3	4	5	6	7
you overestimated or underestimated its importance						you saw things in the right proportion

27. When you think of difficulties you are likely to face in important aspects of your life, do you have the feeling that:

1	2	3	4	5	6	7
you will always succeed in over-coming the difficulties						you won't succeed in over-coming the difficulties

28. How often do you have the feeling that there's little meaning in the things you do in your daily life?

1	2	3	4	5	6	7
very often						very seldom or never

29. How often do you have feelings that you're not sure you can keep under control?

1	2	3	4	5	6	7
very often						very seldom or never

Appendix B

Somatic Health Questionnaire

Below are listed some physical conditions or disorders. Please indicate your experience with these conditions by circling the number that best describes the frequency of the condition.

The numbers one through five are representative of the following statements:

0. I never experience this condition. This condition never occurs.
1. I rarely experience this condition. This condition seldom occurs.
2. I occasionally experience this condition. This condition occurs sometimes.
3. I frequently experience this condition. This condition occurs often.
4. I experience this condition all the time. This condition occurs all the time.

1. Headaches or migraines.....0 1 2 3 4

2. Sleeping disorders.....0 1 2 3 4
   such as insomnia

3. Muscle cramping.....0 1 2 3 4
   such as back spasms or
   pain in shoulders and neck

4. Obesity.....0 1 2 3 4

5. Throat inflammation.....0 1 2 3 4

6. Gastrointestinal problems.....0 1 2 3 4
   such as ulcers, cramping or
   complications

7. High blood pressure.....0 1 2 3 4

8. Heart disease.....0 1 2 3 4

9. Liver or Kidney problems.....0 1 2 3 4

10. Respiratory problems such.....0 1 2 3 4
    as shortness of breath

11. Colds.....0 1 2 3 4

12. Physical Tension.....0 1 2 3 4

Appendix D

Raw scores

Questionnaire	SOC score	Somatic Health score
1	158	10
2	174	5
3	112	25
4	150	14
5	154	21
6	148	8
7	137	13
8	155	11
9	156	4
10	125	17
11	163	11
12	165	6
13	172	9
14	135	6
15	139	12
16	154	11
17	169	9
18	124	8
19	174	8
20	121	10
21	148	19
22	175	16

23	171	2
24	149	15
25	151	6
26	166	4
27	138	19
28	147	15
29	158	9
30	162	5
31	154	6
32	137	13
33	155	9
34	170	5
35	122	16
36	137	8
37	121	12
38	158	10
39	156	6
40	165	4
41	140	8
42	146	10
43	132	12
44	136	4
45	168	9
46	147	12
47	120	10
48	156	7

49	154	9
50	172	6
51	149	11
52	151	13
53	146	10
54	128	6